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Oliff & Berridge PLC
P. O. Box 19928
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EXAMINER

EVANS, ROBIN OCTAVIA

ART UNIT	PAPER NUMBER
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3752

DATE MAILED: 01/15/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/733,041

Applicant(s)

BENOIST, JEAN FRANCOIS

Examiner

Robin O. Evans

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 November 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Drawings

1. The proposed drawing correction was received on November 29, 2001 and filed as Paper No. 8. This correction is approved.

Response to Amendment

2. The amendment presented in communication filed November 29, 2001 as Paper No. 9 is acknowledged.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 15 and 39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 15 recites the broad recitation "propellant gas", and the claim also recites, "constituted by a non-liquefied compressed gas" which is the narrower statement of the range/limitation.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired.

In claim 39 it is unclear if the limitation of compressed air is an additional element in the receptacle or if the claim intends to further limit the propellant gas recited in claim 15.

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Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 3, 5, 7, 10-12, 23, 33 and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Lund.

Lund shows a dispensing head with a nozzle having a swirl chamber 42 with a chamber diameter CD in the range of .05 mm to 1.5mm, discharge orifice 42 with a diameter OD of about .35 mm, center post 26 and vanes 48 having an individual exit area (EA) in the range of .02 mm to .07 mm. The values disclosed in Lund's device can be used to meet the ratio limitations as recited in the claims. For example, using $EA = .02$, $CD = D_s = 1.5$, and $OD = d_o = .5$, the ratios are determined as $A_p/A_o = .415$ (which is less than .5) and $A_p/D_s \cdot d_o = .076$ (which is less than .2). It should be noted that $A_p = EA$ times the number of vanes = .04 since Lund discloses in column 4, lines 43-46 the number of vanes being at least two.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2, 4, 6, 8, 9 and 24-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lund.

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Lund's atomizing device shows all of the claimed limitations including the swirl chamber having a length H but does not disclose the ranges for the length of the swirl chamber. The length of the swirl chamber will be chosen to achieve the desired results wanted by the user, therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have made the length of the swirl chamber in the claimed range of .1 to .2 mm so as to be able to achieve a desired result.

As to claims 2, 4, 6 and 25-29 and the limitations of the ratio A_p/A_o being in a range that is less than or equal to .4, the ratio of $A_p/(D_s \cdot d_o)$ that lies in the range 0.1 to 0.15 and the ratio of L_s/D_s being in a range that is less than or equal to 0.25, it is deemed that the ratios will be determined by the user depending on the desired spray wanted. Therefore it would have been obvious to one of ordinary skill in the art to have chosen ratios in the recited claimed ranges to produce a spray having characteristics wanted by the user, since in column 5, lines 47-52, Lund discloses that the exit area, chamber diameter and orifice diameter are important and will be sized depending on the spray characteristics wanted.

As to claims 8 and 32 and the limitation of the size range of the orifice diameter, it is deemed that the orifice diameter will be determined depending on the other nozzle characteristics and the spray desired since Lund discloses that the orifice diameter sizing is important in achieving a desired spray, see column 5, lines 47-52.

9. Claims 13-22 and 35-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lund in view of Heeb et al.

Lund shows all of the claimed limitations but does not show the nozzle in an aerosol receptacle. Heeb et al. shows an aerosol receptacle for spraying deodorant and hair spray whose

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contents after filling are at a temperature of 20 C and a pressure in the claimed range. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have replaced the manual pump receptacle of Lund's device with an aerosol receptacle like the one shown by Heeb et al. so as to be able to spray a different type of product.

As to limitations of the content of the receptacle being cosmetic hair spray or deodorant or the type of propellant gas, it is deemed that the contents of the receptacle will be chose by the user depending on the application of the device

10. Claims 1-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burke et al.

Burke et al. shows an aerosol receptacle with a dispensing head having a nozzle 36 exit orifice 34, center post 70, swirl chamber 66, and channels 65. Figures 8 and 10 shows an orifice diameter A, chamber diameter D and width of the channels G. Burke does not disclose the ranges of the swirl chamber diameter, exit area of the channels, or orifice diameter. It would have been obvious that one of ordinary skill in the art, depending on the product being sprayed and the pressures and particle size wanted, would determine the diameters of the exit orifice swirl chamber and feed channels employed since Burke discloses that these parameters are important to achieve a desirable spray (see column 1, lines 42-57 and column 3, lines 27-40).

As to claim 14 and the limitation of the type of propellant used in the receptacle, it is deemed that the type of propellant used in the aerosol receptacle will be determined by the user depending on the application the device is used for.

As to limitations of the content of the receptacle being cosmetic hair spray or deodorant, it is deemed that the contents of the receptacle will be chose by the user depending on the application of the device.

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As to the limitations of the particle size, flow rate, temperature and pressure of the contents of the receptacle, it is deemed that the particle size, flow rate, pressure and temperature of the contents of the container will be determined depending on the spray desired by the user.

Response to Arguments

11. Applicant's arguments filed November 29, 2001 have been fully considered but they are not persuasive.

Applicant's argument that the preferred range indicated by the Lund reference are far away from the recited ranges is noted, however Lund does not disclose that these preferred ranges are the only values that can be used, and further Lund gives other ranges and values can be used in his disclosed atomizer and it these ranges that can be used to meet the claimed limitation of the invention recited.

As to applicant's argument that Lund's preferred number of vanes is 3 and there is no express teaching to use the least amount of vanes, although Lund's preferred number of vanes is 3, it is disclosed in column 4, lines 43-46, that in a preferred embodiment that the nozzle insert has at least two vanes.

As to applicant's argument that the vales have been arbitrarily chosen from Fig. 5 by the examiner, the values chosen by the examiner were taken from value ranges disclosed in the reference as being useable in the device, Lund teaches these values as part of the disclosed ranges, see the last line of column 2 through column 3, line 8 and column 6, lines 5-15. Lund also discloses, in column 5, lines 47-52, that the exit area of the vanes and the proper sizing of the chamber diameter and orifice diameter are critical to achieving a desired spray characteristic, therefore one of ordinary skill in the art, using Lund's atomizing device, wanting a desired spray

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characteristic would chose a value from the ranges disclosed by Lund to achieve the desired spray since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

As to the applicant's argument that Burke fails to appreciate the problems overcome by the invention and one of ordinary skill in the art would no have been led to used the recited specific values, Burke discloses, in column 1, lines 42-57 and column 3, lines 27-40 that diameter of the orifice and the diameter of the swirl chamber along with other parameters are important to achieve desirable spray characteristics. Therefore one of ordinary skill in the art would have chosen the specific ranges recited in the claimed invention so as to achieve a desirable spray characteristic since it has been held that where the general conditions are disclosed, discovering the optimum or workable ranges involves only routine skill in the art.

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robin O. Evans whose telephone number is (703) 305-5766. The examiner can normally be reached on Monday-Thursday, 6:30-4:00 and alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Scherbel can be reached on (703) 308-1272. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7766 for regular communications and (703) 308-7766 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0861.



Robin O. Evans
Examiner
Art Unit 3752

1/12/02

roe
January 12, 2002

Attachment for PTO-948 (Rev. 03/01, or earlier)
6/18/01

The below text replaces the pre-printed text under the heading, "Information on How to Effect Drawing Changes," on the back of the PTO-948 (Rev. 03/01, or earlier) form.

INFORMATION ON HOW TO EFFECT DRAWING CHANGES

1. Correction of Informalities -- 37 CFR 1.85

New corrected drawings must be filed with the changes incorporated therein. Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and centered within the top margin. If corrected drawings are required in a Notice of Allowability (PTOL-37), the new drawings **MUST** be filed within the **THREE MONTH** shortened statutory period set for reply in the Notice of Allowability. Extensions of time may **NOT** be obtained under the provisions of 37 CFR 1.136(a) or (b) for filing the corrected drawings after the mailing of a Notice of Allowability. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

2. Corrections other than Informalities Noted by Draftsperson on form PTO-948.

All changes to the drawings, other than informalities noted by the Draftsperson, **MUST** be made in the same manner as above except that, normally, a highlighted (preferably red ink) sketch of the changes to be incorporated into the new drawings **MUST** be approved by the examiner before the application will be allowed. No changes will be permitted to be made other than correction of informalities, unless the examiner has approved the proposed changes.

Timing of Corrections

Applicant is required to submit the drawing corrections within the time period set in the attached Office communication. See 37 CFR 1.85(a)

Failure to take corrective action within the set period will result in **ABANDONMENT** of the application.